



Transportation Demand Management (TDM) Updates



COLORADO
Department of Transportation

Lisa Streisfeld
Office of Innovative Mobility

Topics Today

- Office of Innovative Mobility
- TDM Defined
- Benefits of TDM
- State TDM Plan (2019)
- CDOT Procedural Directive 1601 and TDM
- How to Create a TDM Plan
- Example Strategies During & Post Construction
- Internal Employee TDM
- TMO Grant Programs
- TDM Resources
- TDM Conference
- Future TDM Tasks



Welcome to **VAN GO**
YOUR LOCAL SERVICES



Lots of ridesharers

We'll help you find someone close by
your home who shares your workplace
destination and hours.

Office of Innovative Mobility

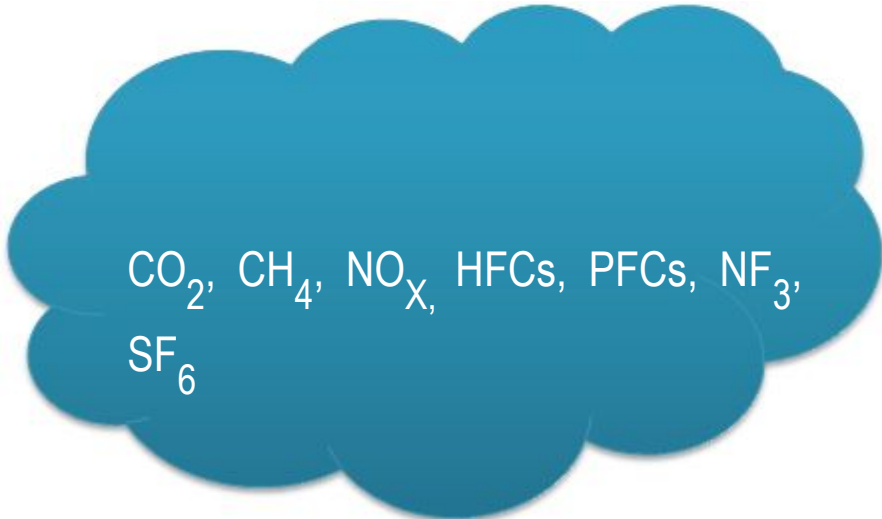
Reduce pollution in our air and congestion on our roads by expanding multimodal transportation options, utilizing traditional and emerging mobility technologies.



Colorado HB 19-1261: Climate Action Plan to Reduce Pollution

Sets bold goals for Colorado to Reduce Greenhouse Gas Emission from 2005 levels

- 26% by 2025
- 50% by 2030
- 90% by 2050



CO₂, CH₄, NO_x, HFCs, PFCs, NF₃,
SF₆



HOUSE BILL 19-1261

BY REPRESENTATIVE(S) Becker and Jackson, Jaquez Lewis, Bird, Cutter, Duran, Froelich, Galindo, Hooton, Kennedy, Kipp, Melton, Roberts, Singer, Sirotta, Snyder, Sullivan, Tipper, Titone, Valdez A., Weissman, Arndt, Benavidez, Buckner, Buentello, Caraveo, Exum, Gonzales-Gutierrez, Gray, Hansen, Lontine, McCluskie, Michaelson Jenet, Mullica, Esgar, Herod, McLachlan; also SENATOR(S) Winter and Williams A., Moreno, Bridges, Court, Danielson, Donovan, Fenberg, Fields, Foote, Ginal, Gonzales, Lee, Pettersen, Story, Todd, Zenzinger.

CONCERNING THE REDUCTION OF GREENHOUSE GAS POLLUTION, AND, IN CONNECTION THEREWITH, ESTABLISHING STATEWIDE GREENHOUSE GAS POLLUTION REDUCTION GOALS AND MAKING AN APPROPRIATION.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, **amend** 25-7-102 as follows:

25-7-102. Legislative declaration. (1) In order to foster the health, welfare, convenience, and comfort of the inhabitants of the state of Colorado and to facilitate the enjoyment and use of the scenic and natural

Transportation Demand Management (TDM)

Reduce or manage vehicular travel to maintain operational capacity on highway infrastructure.

- Don't travel: remote work, school, doctor's appointments, etc.
- Change day of travel
- Change time of day
- Change the route of the trip
- Change the mode of the trip: walk, bike, bus, rail, scooter, TNC
- Transit for special events
- Combine trips
- Combine persons taking the trips:
 - Carpool
 - Vanpool
 - School pool
 - Ski-pool

*TNC = Transportation Network Company: such as Uber, Lyft, Hop-Skip-Jump

BENEFITS:

- Reduce vehicle miles traveled
- Reduce congestion and delay
- Reduce greenhouse gas emissions
- Enhance operational lifespan of infrastructure
- Helps maintenance during winter operations
- Reduces wear and tear on transportation network
- Reduce parking needs downtown
- Help promote economic development
- Increase accessibility to opportunities
- Reduce noise impacts
- Diversify mobility choice

Transportation demand management is

influencing people's behavior



to use the existing infrastructure

in more efficient ways.

Mobility Lab

2019 Statewide TDM Plan

- Inventory of TDM Strategies in the State
- Document Where Strategies are Being Implemented
- Estimate Participation
- Evaluate Cost to Implement
- Calculate Cost Effectiveness

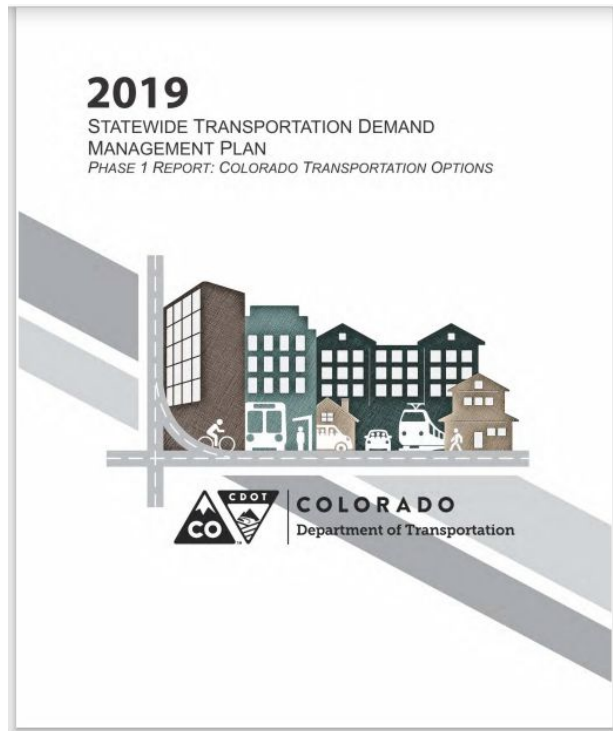
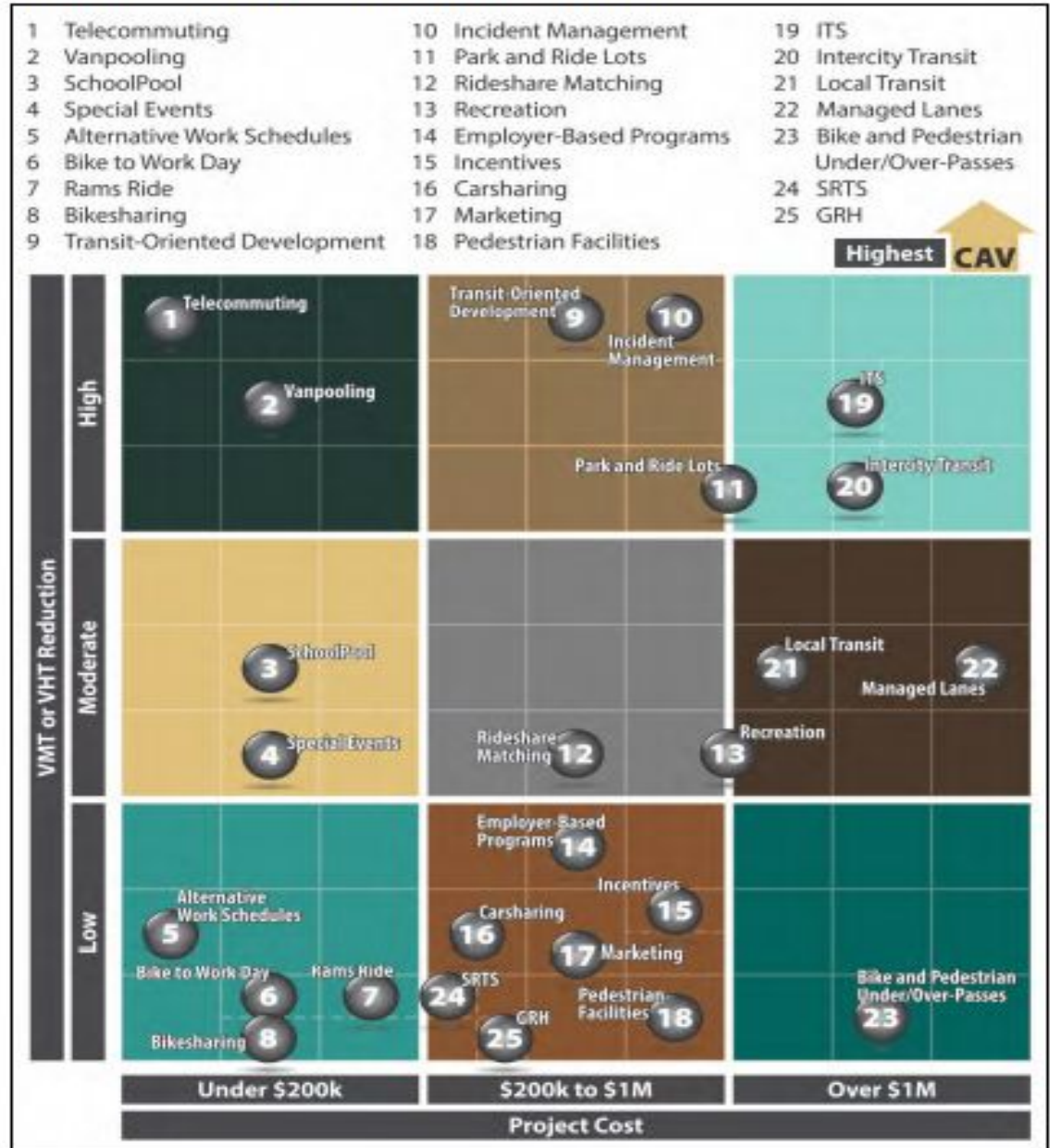


Figure VIII.2: Summary of Colorado TDM Cost Effectiveness



Policy Directive #1601 for Interchange Access Approval

- The process to review and approve requests for new interchanges and major or minor improvements to existing interchanges on the state and federal-aid highway system
- The policy integrates FHWA and CDOT environmental, access, permitting, and planning partner approval elements into one overarching process
- Preserve the state highway system's level of service (LOS)
- Ensure fair and consistent consideration of proposals for new & existing interchanges
- Have sufficient information for CDOT to make an informed decision
- Minimize duplicative analytical, regulatory, and procedural requirements
- Amended by Transportation Commission in 2021
 - Will require applicants to include a TDM (Transportation Demand Management) Plan for Type 1 and Type 2 interchange proposals. Also applies to Type 2 interchange modifications on interstate facilities.
 - Applicant to meet a TDM scorecard with a target point system based on the type & location of the proposed improvement.

Inclusion of a TDM Plan for PD 1601 Interchange Approval

Goals:

- Early promotion of multi-modal options
- Provide alternative travel choices
- Preserve the functionality and operability of the transportation infrastructure investment
- Decrease VMT-Vehicle Miles Traveled
 - 3% or greater reduction in ADT(Average Daily Traffic) in MPO areas
 - 1% or greater reduction in ADT outside of MPO areas
- Decrease vehicle greenhouse gas emissions



PD # 1601 Process Overview Steps

- Notification by applicant
- Pre-application meeting
- Initial intergovernmental agreement (IGA)
- Prepare a System Level Study (SLS)
- CDOT Approval of SLS
- Approval by MPO/TPR Board (consistent with constrained RTP and TIP)
- Conceptual design and NEPA approval process
- Final Intergovernmental Agreement (includes TDM Plan)

Ten Step: How to Create a TDM Plan

1 - Describe Proposed Development

- a. Current and future land uses (within the development)
- b. Population (density and behaviors)
- c. Trip generation rates
- d. The transportation problem (use System Level Feasibility Study)
 - a. Why are people currently using the modes of transportation that they are? Are they limited to one mode?
 - b. What kind of traffic volumes are targeted for change?
 - c. Where does congestion occur and what time/day of week?
- e. Overall goals/solutions that these TDM Strategies will accomplish
- f. General performance targets (elaborate in Section 10: Evaluation Plan)
 - a. What are the mode split and/or trip reduction goals?
 - b. What is the implementation timeline?

Ten Step: How to Create a TDM Plan

2 - List Existing Land Use Plans and Conditions

- a. Existing master plans
 - a. Are there bike, pedestrian, TDM, and/or transportation master plans for the city or county?
- b. Population (density and behaviors)
- c. Existing or future transit plans
- d. Adjacent land use and context

Ten Step: How to Create a TDM Plan

3 - Define Target Population

- a. Population density
 - a. What is the population density for the planned area?
 - b. Note: Rural and urban communities need context-sensitive solutions.
- b. Demographics
 - a. Whose mobility behavior is being targeted (residents, employees, universities, schools, shift employees, game-day attendees, tourists, etc.)?
 - b. Are there any groups with unique needs (students, veterans, seniors, etc.)?
 - c. Who is living and working in this area?
- c. Current travel patterns
 - a. How are users getting around the area?
- d. Understand Why are the trips being taken?
 - a. Commerce
 - b. Recreation
 - c. Education
 - d. Medical
 - e. Employment

Ten Step: How to Create a TDM Plan

4 - Plan Coordination

- a. Local agency stakeholders
 - a. Who should be involved from the City and/or County (including elected officials)?
- b. TPR, MPO, and/or TMA/TMO
 - a. Are any groups doing work in the area and do they have TDM programs this plan should coordinate with?
- c. Transit agencies, other nonprofits, or private companies
- d. CDOT representatives
 - a. Have you discussed this plan with CDOT regional representatives and/or TDM-focused CDOT representatives?

Ten Step: How to Create a TDM Plan

5 - Propose Solutions and Strategies

a. TDM Strategy Selection

- a. What options will address the transportation problems? Refer to the [CDOT website on TDM](#), and [Statewide TDM Plan](#) for ideas.
- b. How will these strategies interact with existing and future infrastructure and influence human behavior?
- c. What new and emerging technologies (micromobility, autonomous shuttles, etc.) make sense in this area?
- d. Will there be any special events in this area that will need other TDM strategies?

b. Context-Sensitivity

- a. How will the proposed TDM strategies complement existing programs and infrastructure to ensure that the proposed improvements do not detract or replace existing strategies?

Ten Step: How to Create a TDM Plan

6 - Costs and Funding Sources for Plan

- a. Startup capital and long-term maintenance costs
- b. Project funds
- c. Partnerships
 - a. What agency or organization will fund the TDM Plan?
 - b. Will financial partnerships with a local transit agency or MPO be needed? Are there opportunities to partner with local business parks, universities, developers, or other private partners?
 - c. Have you considered federal and state grants?
 - d. Are additional funds from CDOT requested?

Ten Step: How to Create a TDM Plan

7 - Identify Needs for an Intergovernmental Agreement (IGA)

- a. Reference a project scope of work
- b. Contain a schedule for implementation of the TDM Plan, which carefully considers lead times for capital acquisition to ensure on-time delivery
- c. Identify the responsible parties for funding and deployment of the TDM plan
- d. Reference dates the IGA is active
- e. Reference a timeframe to revisit, refresh and amend both the TDM Plan and the IGA
- f. Contain signatories and their respective titles.

Ten Step: How to Create a TDM Plan

8 - Marketing and Education Plan

- a. Communications and marketing plans
 - a. Are flyers and/or press releases needed?
 - b. Provide information about all of the social media platforms and electronic communications that will be used to encourage the use of these TDM strategies.
 - c. What other groups in the community need outreach?

Ten Step: How to Create a TDM Plan

9 - Create a TDM Implementation Schedule

- a. Schedule with key tasks identified
- b. Start date
- c. Management responsibilities and staffing
- d. Operations & Maintenance responsibilities and staffing needs

Ten Step: How to Create a TDM Plan

10 - Evaluate Success of the Plan

- a. Determine Key Performance Indicators (KPIs) of a successful project and how they will be reported
- b. Identify parties responsible for evaluation and cadence of reports
- c. What type of greenhouse gas emission reduction will be achieved by this plan?

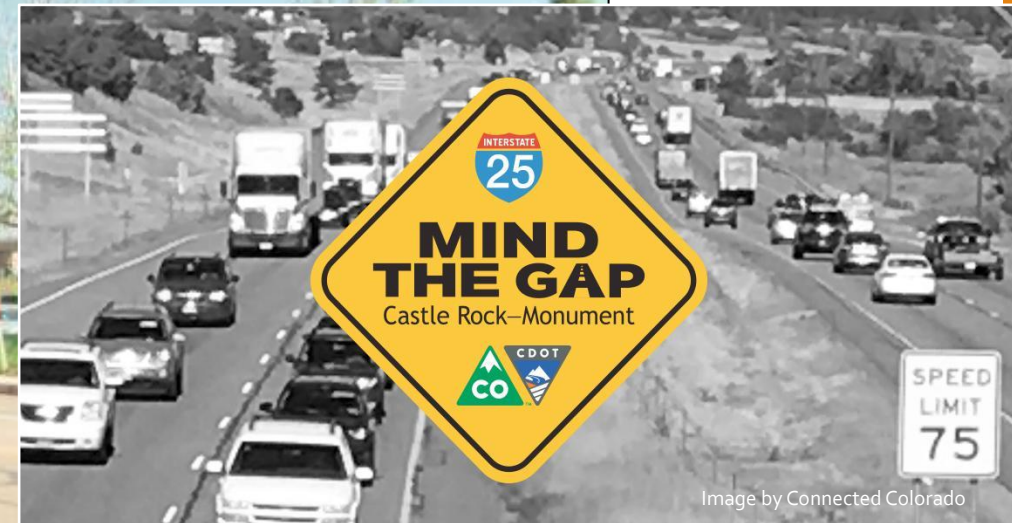


Examples of TDM During Construction



- Public marketing campaign
- Increase in transit options
- Local employer participation
- Dedicated safety patrol.. traffic incident management system

I-25 Gap Project



I-70 Central Corridor Construction



SH 82 Grand Avenue Bridge Replacement



I-25/US 24 Cimarron Interchange





Examples of TDM Post-Construction



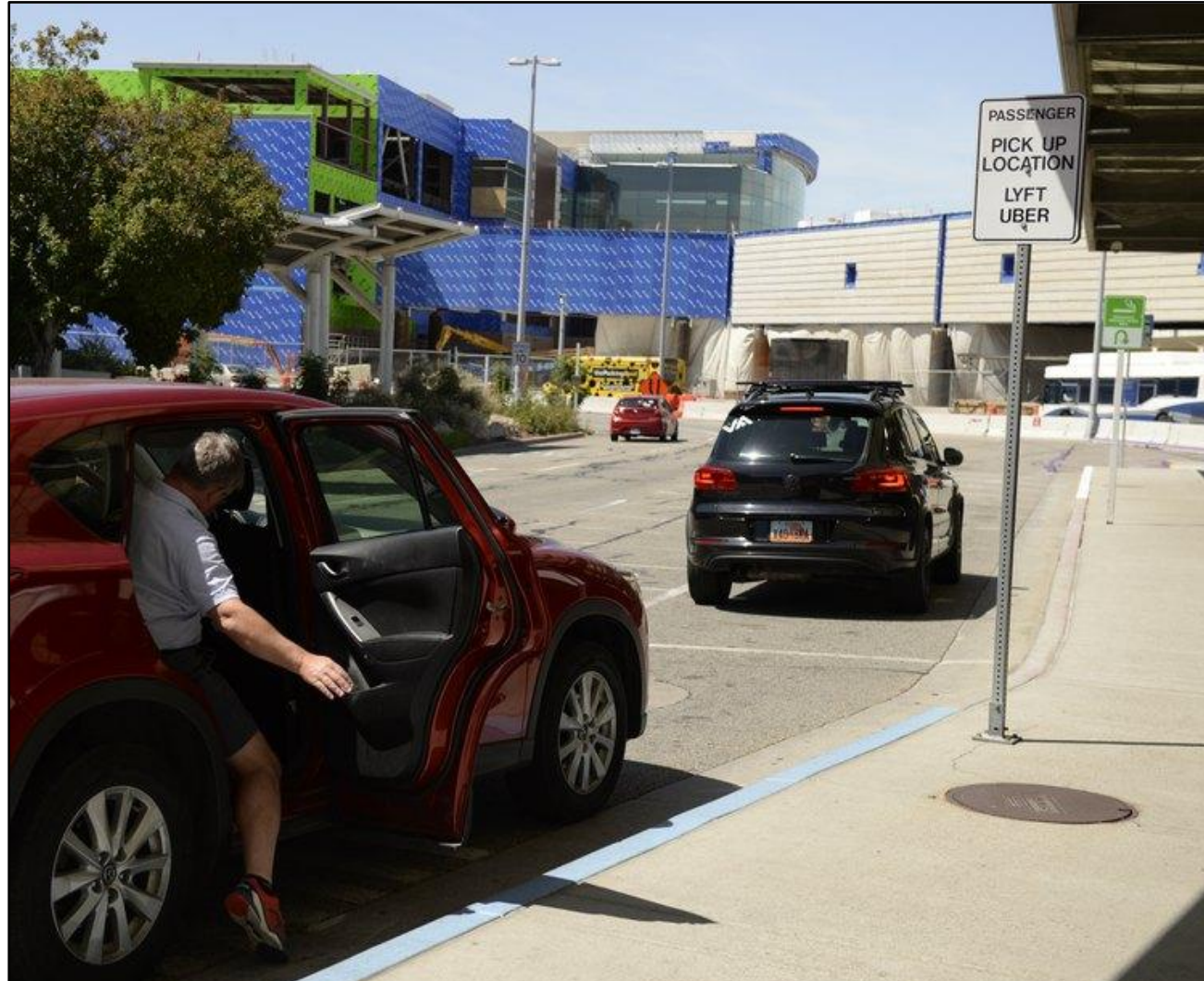
Mobility Hubs:



US 36 and I-70 Bikeways



Curb Space for TNCs



Transit and Transit Support Amenities



- Bus Only Lanes
- Transit Queue Jumps at Traffic Signals
- Dedicated Curb Space
- Curb Space Management Systems
- Digital Mobility Hubs-Connected Colorado
- Transit Ticketing Connectivity to other modes (TNCS or Scooter Share)



Targeted Transit Services

Bustang to Estes Park
Pegasus
Snowstang
Ramsride
Employer Shuttles

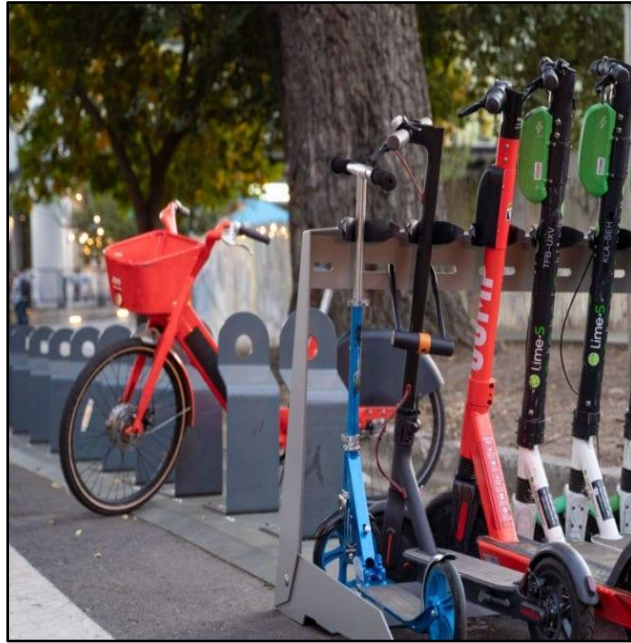


Comfortable and Connected Pedestrian Facilities



Bike Infrastructure

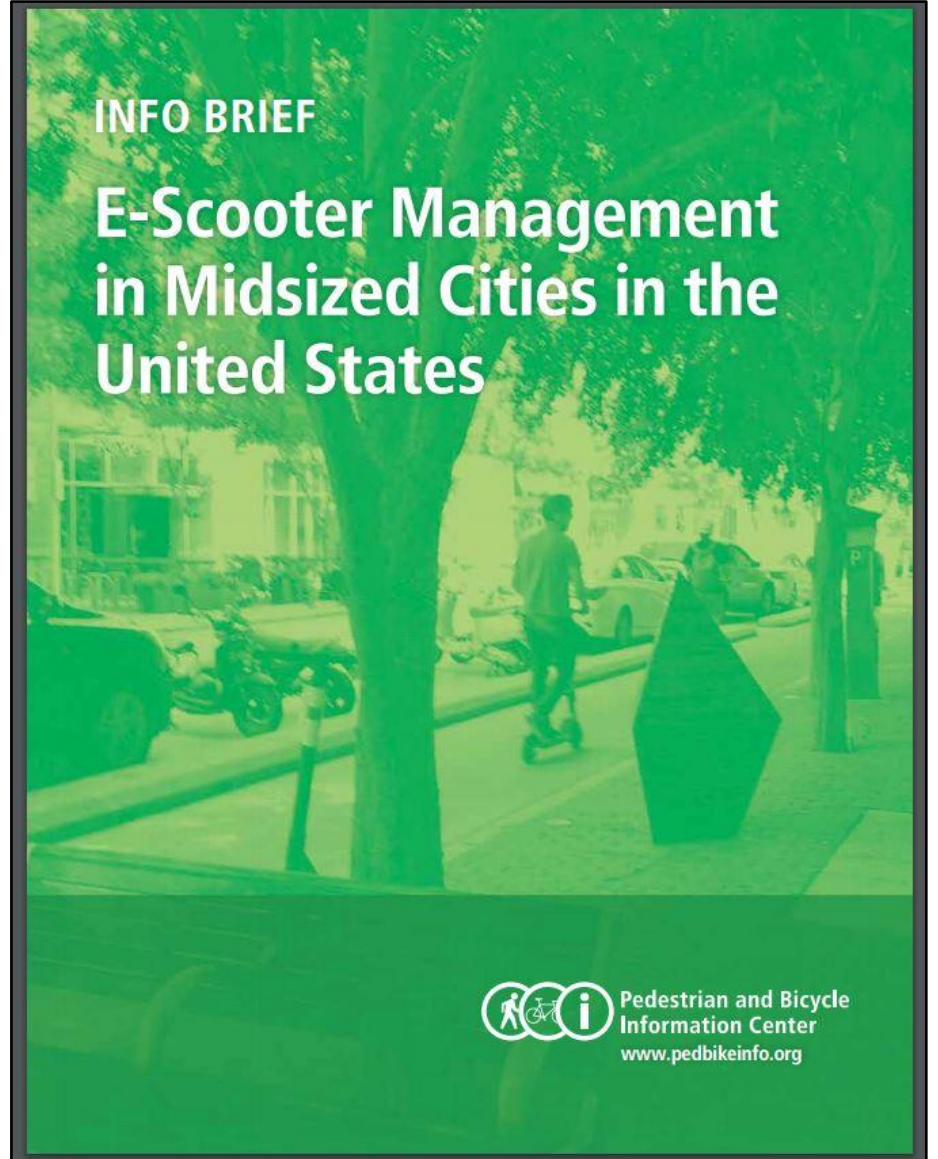




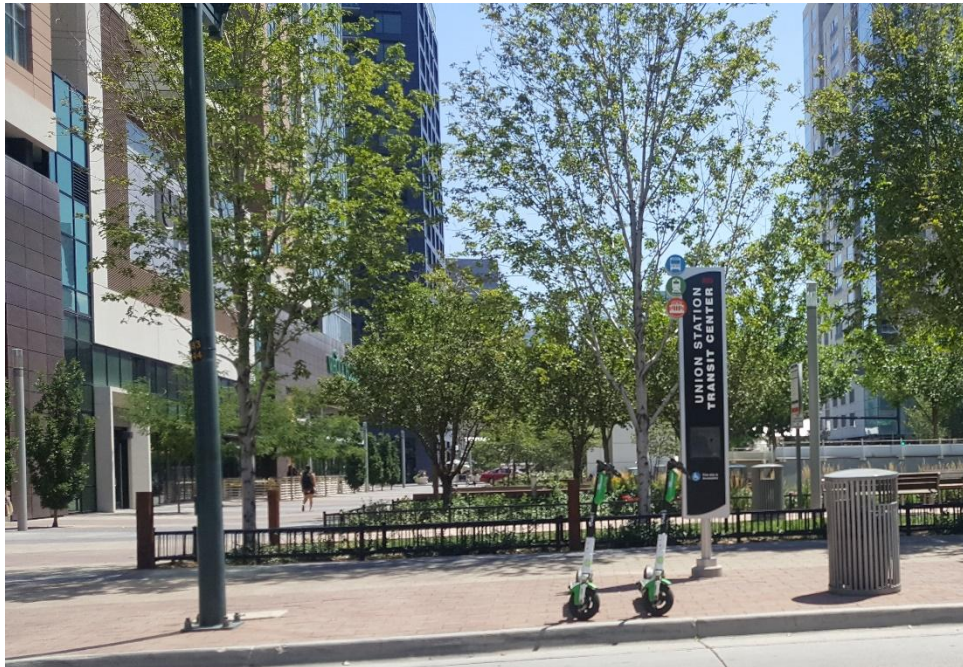
Micromobility

INFO BRIEF

E-Scooter Management in Midsized Cities in the United States



 Pedestrian and Bicycle
Information Center
www.pedbikeinfo.org



Carshare



Image by Colorado Carshare

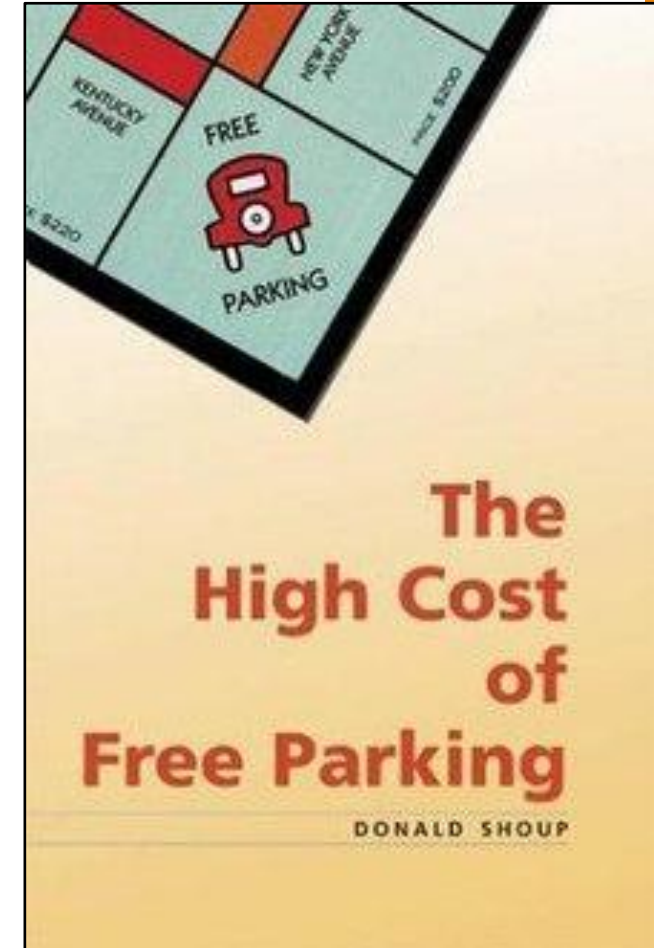


Image by Denver Post

EV Charging Stations



Parking Management Systems



Marketing and Education Programs

GoTober 2020: Top Commuters ⌵

October 01, 2020 - October 31, 2020

Log your trips and climb your way to the top of the leaderboard!

Modes Eligible: Bike, Carpool, Transit, Vanpool, Walk, E-Scooter, Telework
Source(s) Eligible: All
Eligible Days: Su, M, T, W, Th, F, S
Maximum Eligible Daily Trips: 4

PARTICIPANTS	TRIPS	DISTANCE	MONEY SAVED	CO2 SAVINGS	CALORIES BURNED
645	17,114	204,404.3 mi	\$0.1 Million	76.5 tons	1 Million

LEADING: PARTICIPANTS


Rank	Name	Trips
	Chelsee	120

Image from MyWayToGo



Remote Work



[2020 CDOT
TELEWORK
GRANT](#)

School-Oriented TDM



Walking School Bus
School Pool Programs
Safe Routes to Schools
Bike Safety Courses

Traveler Information



ROAD CAMERAS



**TRAFFIC MANAGEMENT
CENTER**



**POST TRAVEL TIMES ON
VARIABLE MESSAGE
BOARD**

Colorado HB 21-1076: Carpooling Internet Applications

- Separates carpool apps from the definition on Transportation Network Companies like Uber or Lyft
- [Website contains:](#) Copy of the bill & Question/Answer document
- Companies required to [Register](#) with CDOT starting Oct. 1, 2021
- Two companies registered to date
- Carpool rides must at least 23 miles
 - Rides to ski resort are exempt from minimum.
- Carpool trips are limited to one round-trip per day
- Vehicles are allowed one driver and up to 6 passengers
- Drivers are reimbursed through these apps for wear/tear on the vehicle and fuel only
- CDOT supports carpooling as a low-cost & high-value solution to reducing vehicle miles traveled and greenhouse gas emissions

National data from [American Community Survey 2019 \(from US Census\)](#)

8.6 % of people carpool to work.



HOUSE BILL 21-1076

BY REPRESENTATIVE(S) McCluskie and Will, Bird, Exum, Froelich, Gray, Hooton, Lontine, McCormick, Michaelson Jenet, Ortiz, Roberts, Titone, Valdez A., Valdez D.;
also SENATOR(S) Donovan and Hisey, Hansen, Jaquez Lewis, Priola, Rankin, Winter.

CONCERNING CARPOOLING SERVICE INTERNET APPLICATIONS, AND, IN CONNECTION THEREWITH, REQUIRING THAT APPLICATION OWNERS OR OPERATORS REGISTER WITH THE DEPARTMENT OF TRANSPORTATION.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, **add** 43-1-127 as follows:

43-1-127. Registration of carpooling service internet applications - limitations - disclosure - definitions. (1) ON AND AFTER OCTOBER 1, 2021, AN OWNER OF A CARPOOLING SERVICE INTERNET APPLICATION OR AN OPERATOR OF THE APPLICATION ON THE OWNER'S BEHALF SHALL REGISTER WITH THE DEPARTMENT ON AN ANNUAL BASIS IN A FORM AND MANNER DETERMINED BY THE DEPARTMENT. THE DEPARTMENT SHALL PUBLISH THE FORM AND MANNER OF REGISTERING ON THE

Capital letters or bold & italic numbers indicate new material added to existing law; dashes through words or numbers indicate deletions from existing law and such material is not part of the act.



MONTHLY FARES

FORT COLLINS ROUTES:

Fort Collins to CDOT \$229

LOVELAND ROUTES:

Loveland to CDOT \$179

FARES INCLUDE:

Fuel, maintenance, insurance, and guaranteed ride home program.



1-800-332-0950

www.vangovanpools.org



RP.ColoradoSprings.Gov

719-385-RIDE (7433)

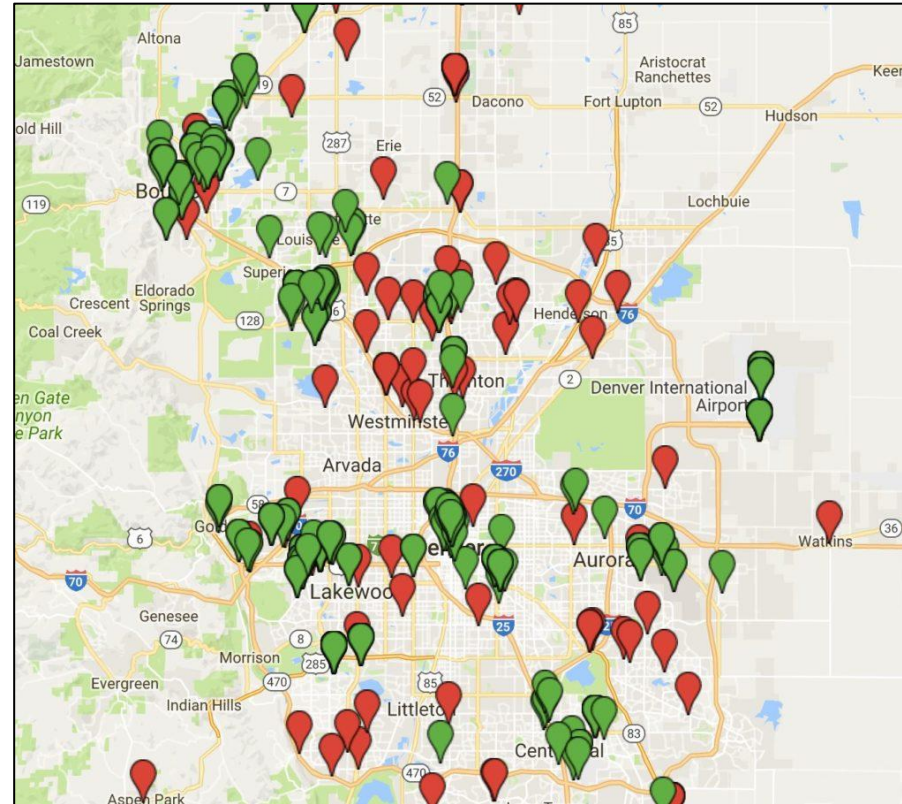
FARES

Minivan Vans



Max Miles/Month <1250 \$115 per person	Max Miles/Month <1250 \$100 per person
Miles/Month 1251-1750 \$155 per person	Miles/Month 1251-1750 \$108 per person
Miles/Month 1751-2250 \$205 per person	Miles/Month 1751-2250 \$124 per person
Miles/Month 2251-2750 \$240 per person	Miles/Month 2251-2750 \$151 per person
Miles/Month >2751 \$275 per person	Miles/Month >2751 \$167 per person

8 pax 12 pax

At No Additional
Cost Every Vanpool
Includes:
Gas
Maintenance
Insurance
Roadside Assistance

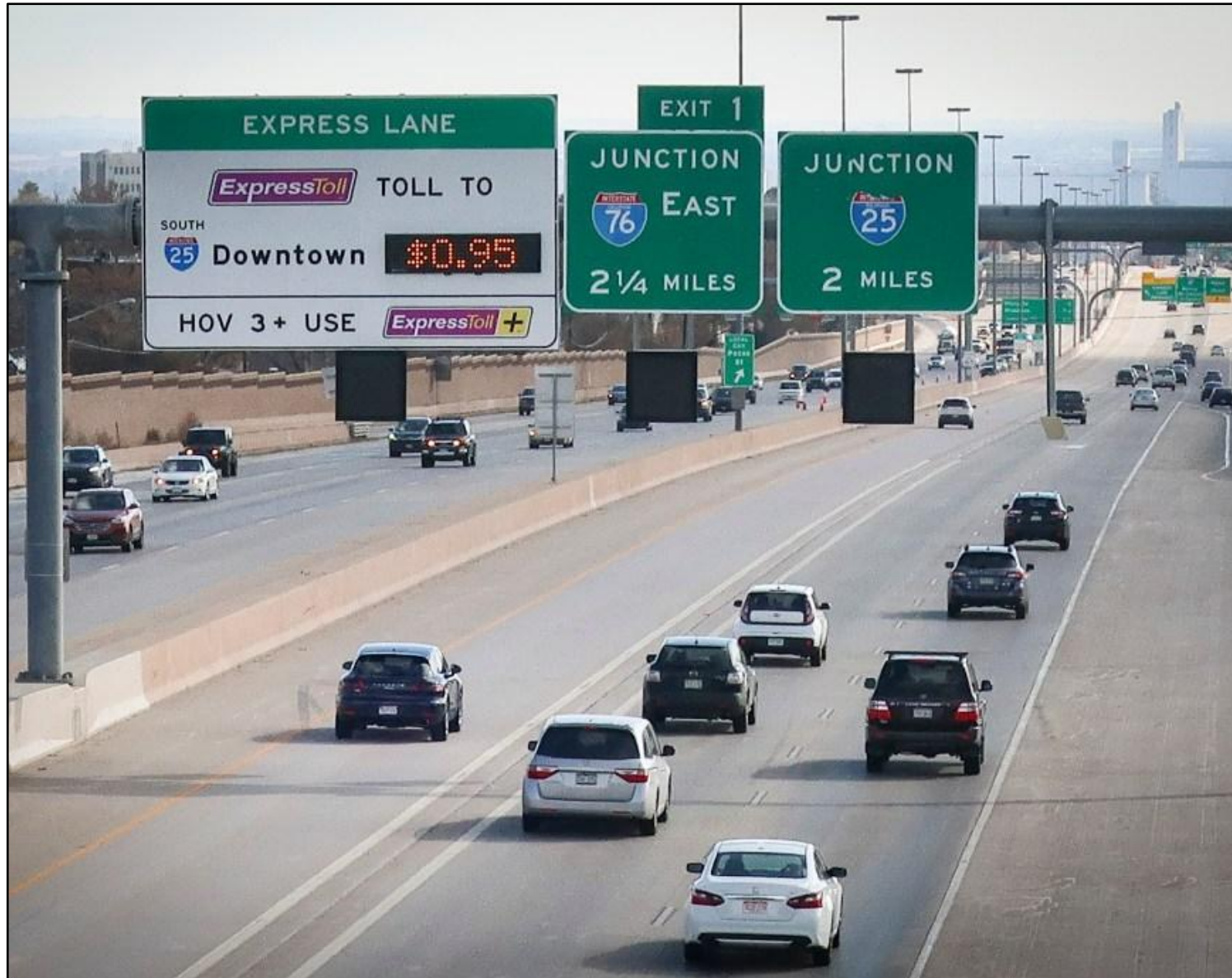


Vanpool

-  = Route starting point
-  = Route destination

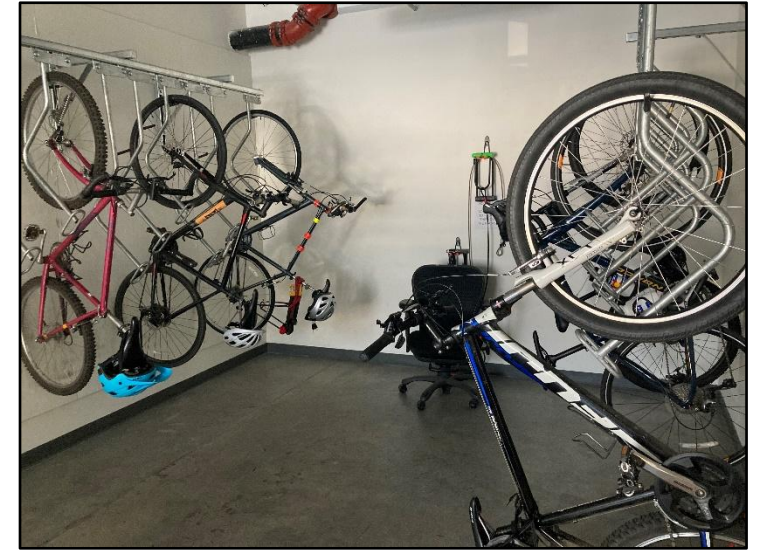
See all the operating vanpools in the Denver metro area on one map, including vanpools from VanGo (Fort Collins), Way to Go (Denver Metro), and Metro Rides (Colorado Springs).

HOV Lanes



CDOT Employee TDM Efforts

- Employee surveys
- Educational webinars
- E-bikes deployment
- E-bike training
- Bike racks at offices
- Indoor bike storage room
- EV training videos
- Participation in Bike to Work days
- Commuter challenges
- Transit rides reimbursement program
- Statewide access to vanpool program
- Installed EV charging on CDOT campuses: fleet vehicle and staff use
- Monthly reimbursement for staff biking to work



Colorado FY 2022 TDM Grants

Encourages actions identified in the 2021 GHG Pollution Reduction Roadmap to meet Colorado's climate targets and reduce congestion.

Opportunity 1: TMO Support Grant

- Released this summer
- Provides funding to Transportation Management Organizations (TMOs)
 - To deploy new trip-reduction projects and programs
 - To support employer-driven TDM planning and interventions
- Over \$450,000 awarded to date

Opportunity 2: TDM Programs, TDM Projects, and Telework Support

- Fall release expected
- Approximately \$400,000 in funding available
- Program has broad scope for TDM
 - To capture innovative approaches for trip reduction
 - To promote teleworking practices
 - To support new programs
- Open to local governments and other transit or governmental entities statewide
 - Private, for-profit companies, nonprofits and transportation management organizations (TMOs) may partner with jurisdictions or be a sub-recipient of a governmental agency

CDOT Staff

- Lisa Streisfeld, Assistant Director of Mobility Services
- John Featherstone, OIM Project Coordinator
- TBD, Mobility Coordinator, Division of Transit and Rail
- Nathan Vanderbroek, Bike and Pedestrian Program Manager
- Kyle French, Bus Operations Manager
- Jeffrey Prillwitz, Bus Operations Coordinator
- Nathan Lindquist, Land Use Planner

EXTERNAL

- Metropolitan Planning Organizations (DRCOG: Way to Go Program or NFRMPO: Van Go)
- 9 TMOs in Colorado
- America Walks
- Bicycle Colorado
- Colorado Association of State Transit Agencies (CASTA)
- American Planning Association (APA)
- Association for Commuter Transportation (ACT)
- NACTO (National Association of City Transportation Officials)
- Transit Agencies

Helpful Documents and Websites

- [CDOT Mobility Services Website](#)
- [Colorado State TDM Plan Phase 1](#)
- [TDM Toolkit](#)
- [10 Steps to Completing a TDM Plan](#)
- Updated Policy Directive 1601 for Interchange Approval which incorporates a requires a TDM Plan
- [CDOT Bicycle and Pedestrian Plan](#) (Amended 2015)
- [NACTO](#): National Association of Street Transportation Officials has a [Micromobility Guide](#)
- [ACT](#): Association for Commuter Transportation with a [Rocky Mountain Chapter](#)
- [Transportation Resource Board](#) has a TDM Committee
- [Mobility Lab](#)
- FHWA-[TDM Bibliography](#)
- [FHWA: Integrating TDM into Transportation Planning](#)
- [North Carolina DOT Statewide TDM Strategic Plan](#)
- [Bicycle and Pedestrian Information Center](#)
- [DRCOG TDM- and Way to Go Program](#)
- [GoBoulder Program](#)
- [City of Durango: TDM Savings Calculator](#)



COLORADO
Department of Transportation

Transportation Demand Management (TDM) Conference

- Co-hosted by the Association of Commuter Transportation (ACT) and CDOT
- **Purpose:** Showcase transportation options geared toward private employers, transportation professionals, municipalities and other organizations that have a role in transportation demand management (TDM)
- November 5, 2021 (7:30 am-1:30 pm)
- Virtual and Free
- [Registration](#) on CDOT OIM/Mobility Services Website
- Sample Session Themes Under Economic Development and TDM
 - Best Practices in Data Collection and Reporting
 - TDM at Schools, Colleges and Universities
 - Local Project Highlights
 - Employer Based TDM Programs
- 18 presentations committed to date



Future TDM Tasks

- Updates to the CDOT NEPA Manual
- Quantitative Assessment of Impacts of TDM Programs
- Publication of Procedural Directive for the 1601 Interchange Approval Process



COLORADO
Department of Transportation

Thank You!

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